



P.B.5818 - Patentlaan 2
2280 HV Rijswijk (ZH)
☎ +31 70 340 2040
TX 31651 epo nl
FAX +31 70 340 3016

Europäisches Patentamt

Zweigstelle
in Den Haag
Recherchen-
abteilung

European Patent Office

Branch at
The Hague
Search
division

Office européen des brevets

Département à
La Haye
Division de la
recherche

HOFFMANN - EITLE
Patent- und Rechtsanwälte
Arabellastrasse 4
81925 München
ALLEMAGNE



Datum/Date

07.05.02

Zeichen/Ref./Réf.

91 120 a/scho

Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

02000161.6-2207-

Anmelder/Applicant/Demandeur/Patentinhaber/Propriétaire/Titulaire

MITSUBISHI DENKI KABUSHIKI KAISHA

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☒ abstract

☒ title

☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract:

3

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	EP 0 917 278 A (DENSO CORP) 19 May 1999 (1999-05-19) * column 4, line 57 - column 9, line 56; figures 1-5 *	1-6	H02K1/16 H02K19/22 H02K9/06 H02K3/28 H02K3/50 H02K3/12
Y	EP 0 314 860 A (GEN ELECTRIC) 10 May 1989 (1989-05-10) * page 4, line 28 - page 7, column 12; figures 3,7 *	1-6	
A	US 5 561 334 A (ISHIDA HIROSHI ET AL) 1 October 1996 (1996-10-01) * column 3, line 49 - column 4, line 29; figures 1-4 *	1-3,5,6	
A	EP 0 881 752 A (DENSO CORP) 2 December 1998 (1998-12-02) * column 23, line 22 - column 35, line 46; figures 1-19 *	1-7	
A	US 5 233 255 A (KUSUMOTO KATSUHIKO ET AL) 3 August 1993 (1993-08-03) * column 2, line 45 - column 3, line 32; figure 1 *	1-6	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H02K
A	PATENT ABSTRACTS OF JAPAN vol. 007, no. 226 (E-202), 7 October 1983 (1983-10-07) & JP 58 116031 A (TOKYO SHIBAURA DENKI KK), 11 July 1983 (1983-07-11) * abstract *	8	
A	US 4 654 551 A (FARR JAMES B) 31 March 1987 (1987-03-31) * abstract; figures 1,2,9 *	1-8	
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 25 April 2002	Examiner Tangocci, A
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

1
EPO FORM 1503 03.82 (P04C01)



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 11, 29 November 1996 (1996-11-29) & JP 08 182274 A (NISSAN MOTOR CO LTD), 12 July 1996 (1996-07-12) * abstract *	1	
A	US 5 804 896 A (SHIMAGUCHI HIROTADA ET AL) 8 September 1998 (1998-09-08) * column 4, line 23 - column 6, line 29; figure 2 *	1	
A	US 5 642 013 A (WAVRE NICOLAS) 24 June 1997 (1997-06-24) * column 4, line 13 - line 61; figures 4,7,10,15 *	1	
A	US 6 023 119 A (ASAO YOSHIHITO) 8 February 2000 (2000-02-08) * column 3, line 57 - column 4, line 47; figures 1,6,8-10 *	1	
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 02, 29 February 2000 (2000-02-29) & JP 11 313450 A (HITACHI LTD; HITACHI TAGA ENG CO LTD), 9 November 1999 (1999-11-09) * abstract *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Place of search MUNICH		Date of completion of the search 25 April 2002	Examiner Tangocci, A
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

1
EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 00 0161

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-04-2002

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0917278	A	19-05-1999	CN	1208277 A	17-02-1999
			DE	69801259 D1	06-09-2001
			DE	69801475 D1	04-10-2001
			DE	69804284 D1	25-04-2002
			EP	0881756 A1	02-12-1998
			EP	0910155 A1	21-04-1999
			EP	0917278 A2	19-05-1999
			JP	11164499 A	18-06-1999
			JP	11243673 A	07-09-1999
			JP	2000102215 A	07-04-2000
			US	6097130 A	01-08-2000
			US	6020669 A	01-02-2000
			US	6091169 A	18-07-2000
EP 0314860	A	10-05-1989	US	4801832 A	31-01-1989
			CA	1312902 A1	19-01-1993
			DE	3855362 D1	18-07-1996
			DE	3855362 T2	06-02-1997
			EP	0314860 A1	10-05-1989
			JP	1129726 A	23-05-1989
			KR	139003 B1	15-06-1998
			US	4831301 A	16-05-1989
			US	RE34667 E	19-07-1994
US 5561334	A	01-10-1996	JP	7095745 A	07-04-1995
			US	5705865 A	06-01-1998
EP 0881752	A	02-12-1998	WO	9854822 A1	03-12-1998
			AU	3686799 A	02-09-1999
			AU	4222897 A	30-12-1998
			AU	710990 B2	07-10-1999
			AU	5829198 A	03-12-1998
			BR	9801214 A	13-07-1999
			BR	9801695 A	05-10-1999
			CA	2231123 A1	26-11-1998
			CA	2238504 A1	26-11-1998
			CA	2238600 A1	26-11-1998
			CN	1202028 A ,B	16-12-1998
			CN	1208277 A	17-02-1999
			CN	1208985 A	24-02-1999
			CN	1200591 A	02-12-1998
			DE	69800498 D1	01-03-2001
			DE	69800498 T2	06-09-2001
			DE	69801259 D1	06-09-2001
			DE	69803217 D1	21-02-2002
			DE	69803813 D1	21-03-2002

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 00 0161

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-04-2002

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0881752	A		DE 69803900 D1	28-03-2002
			EP 1026810 A1	09-08-2000
			EP 1179881 A1	13-02-2002
			EP 0881752 A1	02-12-1998
			EP 0881756 A1	02-12-1998
			EP 0881747 A2	02-12-1998
			EP 0881742 A2	02-12-1998
			EP 0881744 A2	02-12-1998
			EP 0881748 A2	02-12-1998
			EP 0881749 A2	02-12-1998
			EP 0881750 A2	02-12-1998
			EP 0881745 A2	02-12-1998
			EP 0881746 A2	02-12-1998
			EP 0881751 A2	02-12-1998
			EP 0881743 A2	02-12-1998
			EP 0881753 A2	02-12-1998
			ES 2154065 T3	16-03-2001
			WO 9854823 A1	03-12-1998
			JP 2000069729 A	03-03-2000
			US 5998903 A	07-12-1999
			US 6097130 A	01-08-2000
			US 5936326 A	10-08-1999
			US 5952749 A	14-09-1999
			US 6011332 A	04-01-2000
			US 5982068 A	09-11-1999
			US 6291918 B1	18-09-2001
			US 6124660 A	26-09-2000
			US 6137201 A	24-10-2000
			US 5955810 A	21-09-1999
			US 6051906 A	18-04-2000
			US 6198190 B1	06-03-2001
US 5233255	A	03-08-1993	NONE	
JP 58116031	A	11-07-1983	JP 1595608 C	27-12-1990
			JP 2013539 B	04-04-1990
US 4654551	A	31-03-1987	BR 8600693 A	13-01-1987
			CA 1254607 A1	23-05-1989
			CN 86101262 A	09-09-1987
			FR 2582164 A1	21-11-1986
			IT 1189665 B	04-02-1988
			JP 61266057 A	25-11-1986
			MX 161778 A	21-12-1990
JP 08182274	A	12-07-1996	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 00 0161

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-04-2002

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5804896	A	08-09-1998	JP	2782044 B2	30-07-1998
			JP	8182281 A	12-07-1996
US 5642013	A	24-06-1997	FR	2726948 A1	15-05-1996
			AT	168508 T	15-08-1998
			CN	1163682 A ,B	29-10-1997
			CZ	9701480 A3	15-10-1997
			DE	69503521 D1	20-08-1998
			DE	69503521 T2	04-03-1999
			DK	793870 T3	19-04-1999
			WO	9615574 A2	23-05-1996
			EP	0793870 A2	10-09-1997
			ES	2121429 T3	16-11-1998
			JP	10511837 T	10-11-1998
			PL	320219 A1	15-09-1997
			RU	2141156 C1	10-11-1999
US 6023119	A	08-02-2000	JP	2000134887 A	12-05-2000
JP 11313450	A	09-11-1999	NONE		